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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/817,145	SCHATZ ET AL.	
	Examiner	Art Unit	
	Mia M. Thomas	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 January 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is responsive to applicant's remarks received on 15 January 2008. Claims 1-16 are pending in the present application. Claims 1-10 and 12-13 have been amended and claims 14-16 have been added herein. No new matter has been added.

Response to Arguments

2. Summary of Response: (a) Applicant's arguments with respect to claim rejections (102(b) as being anticipated by Lehman (2003/0048939 A1) of claim 1, at page 7 of 9, have been considered but are moot in view of the new ground(s) of rejection.

- (b) Applicant's arguments with respect to claim rejections of claim 9, at page 8 of 9, have been considered but are moot in view of the new ground(s) of rejection.
- (c) Applicant's arguments with respect to claim rejections of claim 12, at page 8 of 9 have been considered but are moot in view of the new ground(s) of rejection. "The references of record do not teach or suggest the limitations of claim 12 and therefore, this claim is allowable."
- (d) Applicant's arguments with respect to claim rejections of claim 13, at page 8 and 9 of 9 have been considered but are moot in view of the new ground(s) of rejection. "The references of record do not teach or suggest the limitations of claim 13 and therefore, this claim is allowable."

Examiner's Response: (a) Examiner has relied upon new prior art references that now teach or suggest "such a scheme that compensated for errors in the measuring system." The new grounds of rejection also teaches or suggests "combining these measuring results with a correction data record that includes "information related to errors in the measuring system".

- (b) Examiner has relied upon new prior art references that now teach or suggest a "correction data record that includes information related to errors in a measuring system".
- (c) Examiner has now relied upon new prior art reference that now teach the limitations of Claim 12 specifically.

- (d) Examiner has not relied upon new prior art reference that now teach the limitations of Claim 13 specifically.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kenan et al. (US 7,133, 548 B2) in combination with Laidig et al. (US 7,175,940 B2) and Crell (US 6,970,589 B2).

Regarding Claim 1: (Currently Amended) Kenan discloses a method for determining imaging errors of an optical system in the production of a mask for semiconductor component fabrication ("A reticle inspection system for inspecting reticles can be used as an incoming inspection tool, and as a periodic and pre-exposure inspection tool. The detection is performed by acquiring the image of the reticle under the same optical conditions as the exposure conditions, (i.e. wavelength, numerical aperture, sigma, and illumination aperture type) and by comparing multiple dies to find errors in the line width." at abstract), the method comprising:

measuring optical properties of a structure of the mask using a measuring system ("The inventive system detects two kinds of defects...(2) surface defects. The detection of surface defects is performed by acquiring transmission and dark-field reflection images of the reticle and using the combined information to detect particles, and other surface defects." at abstract);

automatically selecting a stored correction data record from a correction database in a manner dependent on at least one parameter that characterizes the mask (Refer to Figure 3, numeral 102, 103 and 106; further at column 9, lines 35-67, specifically, "The corrected data is sent with the synchronization signal to the image processing module. The scanner is controlled by a main controller computer (not shown).");

Laidig teaches the correction data record including information related to errors in the measuring system ("The present invention generally relates to photolithography, and in particular to a method of generating a known set of functions (i.e., calibrated model) defining the performance of an imaging system which are subsequently utilized to correct for optical

proximity effects and to improve the printing of mask patterns on substrates." at column 1, line 16);

Crell teaches by way of example, combining measurement results associated with the measured optical properties with the correction data record associated with the mask in a data processing device to produce a corrected measurement result ("comparing the first image and the second image" at column 3, lines 4-6; further refer to column 1, lines 51-58). For clarity, the Examiner is showing by way of example that Crell teaches comparing multiple measurement results associated with the correction data record. This example is further shown at Figure 2 and 3.

and storing a measurement data record with the corrected measurement result in a database system ("...step (g) is carried out while using the first defect inspection system to record another portion of the sub-area of the first mask and using the first control computer to construct a first image from the other portion, and while using the second defect inspection system to record another portion of the sub-area of the reference mask and using the second control computer to construct a second image from the other portion of the reference mask." at column 3, line 14).

Kenan, Laidig and Crell are combinable because they are in the same field of mask inspection where the inspection scans for defects, holes, etc. (See title and abstract of each invention).

All the claimed elements were known in the prior art at the time of the invention. The skilled artisan could have combined all these claimed elements by known methods with no change in

their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Kenan does not specifically teach that the correction data record includes information related to errors in the measuring system, however, Laidig teaches "defining the performance of an imaging system which are subsequently utilized to correct for optical effects", at column 1, line 16.

This claim element would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Specifically, Laidig teaches mask inspection of not only the mask (photolithography for optical transfer) but also inspection of the system onto which the pattern is formed onto a substrate. (At abstract). Therefore, at the time of the invention it would have been obvious to the skilled artisan to substitute the correction data record of Laidig with the method and apparatus for reticle inspection as disclosed by Kenan to obtain the specified claimed elements as rejected above.

Specifically, Crell teaches combining measurement results associated with the measured optical properties with the correction data record associated with the mask in a data processing device to produce a corrected measurement result.

Although, Kenan and Laidig does not specifically teach combining measurement results to produce a corrected measurement result, Crell teaches by way of example, the implementation of this combination of these measurement results. The simple substitution would have been

obvious because the substitution of one known element for another would have again yielded predictable results to one of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to combine Kenan, Laidig and Crell to obtain the invention as specified in Claim 1.

8. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenan et al. (US 7,133, 548 B2) in combination with Laidig et al. (US 7,175,940 B2) and Crell (US 6,970,589 B2) and further in view of Lehman (US 2003/0048939 A1).

Regarding Claim 2: (Currently Amended)

The combination of Kenan, Laidig and Crell teaches all the claimed elements as rejected above. The combination of Kenan, Laidig and Crell does not specifically teach the parameter that characterizes the mask is the wavelength at which the mask is used in a photolithography method, however,

Lehman teaches wherein the parameter that characterizes the mask is the wavelength at which the mask is used in a photolithography method ("Indeed, the inventive method and apparatus are equally applicable to inspection of masks, photo masks, reticles, or any other such product used in similar fashion in the manufacture of semiconductor devices, as for example by a photolithographic process." at paragraph [0076]. "In such an inspection, interferometers could be used, especially where resolution on a wavelength scale is needed." at paragraph [0068]).

Kenan, Laidig, Crell and Lehman are combinable because they are in the same field of mask inspection where the inspection scans for defects, holes, etc. (See title and abstract of each invention).

All the claimed elements were known in the prior art and one skilled in the art could have combined "the parameter that characterizes the mask as a wavelength at which the mask is used in a photolithography method" as taught by Lehman and, by known methods with no change in their respective functions, and the combination of the claimed elements of claim 1 with the parameter of characterization as taught by Lehman would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Kenan, Laidig and Crell with the teachings of Lehman to obtain the specified claimed element to obtain claim 2.

Regarding Claim 3: (Currently Amended) Lehman teaches wherein the parameter for the characterization of that characterizes the mask is a substance property of the mask ("Referring to Figure 1, the inventive method is implemented as follows. First, a reticle which is know to be good (i.e. is believed to be substantially free of defects, or as free of defects as is reasonably possible) is identified (step 1)." at paragraph [0030]).

Regarding Claim 4: (Currently Amended) Kenan discloses wherein the correction data record includes information for the correction of inhomogeneities of a radiation source of the measuring system ("In this mode, the radiation from the illuminating light source 3 passes through the

homogenizer and illumination optics 5 and the condenser 6." at column 6, line 57; further, "For example, one of the widely available simulation software packages (AIMS™, VSS™, Sigma C, Finley™) can be adapted for this purpose. The AIMS™ software was designed by IBM Corporation to be used on the MSM100 tool and can simulate the aerial images of the phase shift masks, as well as the masks having optical proximity corrections." at column 11, line 18)

By way of example, Lehman teaches wherein the correction data record includes information for the correction of inhomogeneities of a radiation source, of the measuring system, in particular of at least one of an associated CCD chip and an optical element, ("Transmission detector 370 and reflection detector 340 may be CCD devices...Light source 310 may be a pulsating laser, as part of the interferometry system, to facilitate inspection of phase shift masks, particularly in conjunction with area CCDs in detectors 370 and 340).

Regarding Claim 5: (Currently Amended) Lehman teaches wherein the optical element comprises a lens ("Light passing through the beam splitter 330 then passes through lens 345, and through article (e.g. mask, photomask, or reticle) 350 on an x-y stages 355 which permits transmission of light." at paragraph [0071]).

Regarding Claim 8: (Currently Amended) Kenan discloses wherein measuring optical properties comprises measuring at least one of CD values and/or positional errors ("In view of the foregoing, it is one feature of the present invention to provide an inspection system that provides more complete information on the properties of the photolithographic mask. Particularly, it is a feature of the present invention to provide a mask inspection system capable

of detecting errors in the image that the mask would actually print on the photoresist during exposure." at column 4, line 30; further, "Preferably, the scanner can be used by the post process and review station through the main computer to grab images of the defects at various focus positions." at column 10, line 1-8)

Regarding Claim 9: (Currently Amended) Kenan discloses a device for determining imaging errors of an optical system in the production of a mask for semiconductor component fabrication ("A reticle inspection system for inspecting reticles can be used as an incoming inspection tool, and as a periodic and pre-exposure inspection tool. The detection is performed by acquiring the image of the reticle under the same optical conditions as the exposure conditions, (i.e. wavelength, numerical aperture, sigma, and illumination aperture type) and by comparing multiple dies to find errors in the line width." at abstract), the device comprising:

a data processor for automatically selecting a correction data record from the correction database in a manner dependent on at least one parameter that characterizes the mask the correction data record including information related to errors in the measuring system (Refer to Figure 3, numeral 102),

Crell teaches correction database with at least one stored correction data record ("As a result of the considerable increases in the speed of computing systems in recent years, changes have increasingly been made from the conventional die-to-die inspection in which identical structures present many times on the mask are compared with one another to die-to-database inspection

in which a structure on the mask is compared with a data image stored in the database.' at column 1, line 44),

a measuring system for determining optically measurable properties of the mask (Refer to Figure 3, numeral 103; ("The inventive system detects two kinds of defects...(2) surface defects. The detection of surface defects is performed by acquiring transmission and dark-field reflection images of the reticle and using the combined information to detect particles, and other surface defects." at abstract);

Crell teaches by way of example, means for combining measurement results of the optically measurable properties of the mask with the correction data record associated with the mask to produce a corrected measurement result ("comparing the first image and the second image" at column 3, lines 4-6); For clarity, the Examiner is showing by way of example that Crell teaches comparing multiple measurement results associated with the correction data record. This example is further shown at Figure 2 and 3.

and means for generating a measurement data record with the corrected measurement result in a database system ("...step (g) is carried out while using the first defect inspection system to record another portion of the sub-area of the first mask and using the first control computer to construct a first image from the other portion, and while using the second defect inspection system to record another portion of the sub-area of the reference mask and using the second control computer to construct a second image from the other portion of the reference mask." at column 3, line 14).

Kenan and Crell are combinable because they are in the same field of mask inspection where the inspection scans for defects, holes, etc. (See title and abstract of each invention).
All the claimed elements were known in the prior art at the time of the invention. The skilled artisan could have combined all these claimed elements by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Kenan does not specifically teach combining measurement results of the optically measurable properties to produce a corrected measurement result nor does Kenan teach specifically, a means for generating a measurement data record with corrected measurement results in a database system, however, Crell teaches those specified claimed elements as rejected above.

Although Kenan does not specifically teach combining measurement results to produce a corrected measurement result, Crell teaches by way of example, the implementation of this combination of these measurement results. The simple substitution of these claim limitations would have been obvious because the substitution of one known element for another would have again yielded predictable results to one of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to combine Kenan and Crell to obtain the invention as specified in Claim 9 to make the overall reticle inspection process more efficient and cost effective.

Regarding Claim 12: (Currently Amended) Kenan discloses a method for determining imaging errors of an optical system in the production of a mask for semiconductor component fabrication ("A reticle inspection system for inspecting reticles can be used as an incoming inspection tool, and as a periodic and pre-exposure inspection tool. The detection is performed by acquiring the image of the reticle under the same optical conditions as the exposure conditions, (i.e. wavelength, numerical aperture, sigma, and illumination aperture type) and by comparing multiple dies to find errors in the line width." at abstract),the method comprising:

measuring optical properties of a structure of the mask using a measuring system; ("The inventive system detects two kinds of defects...(2) surface defects. The detection of surface defects is performed by acquiring transmission and dark-field reflection images of the reticle and using the combined information to detect particles, and other surface defects." at abstract);

Lehman teaches detecting at least one parameter for the characterization of the mask; ("Indeed, the inventive method and apparatus are equally applicable to inspection of masks, photo masks, reticles, or any other such product used in similar fashion in the manufacture of semiconductor devices, as for example by a photolithographic process." at paragraph [0076]. "In such an inspection, interferometers could be used, especially where resolution on a wavelength scale is needed." at paragraph [0068]).

automatically selecting a stored correction data record from a correction database in a manner dependent on at least one parameter that characterizes the mask, (Refer to Figure 3, numeral 102, 103 and 106; further at column 9, lines 35-67, specifically, "The corrected data is sent with

the synchronization signal to the image processing module. The scanner is controlled by a main controller computer (not shown).");

Crell teaches by way of example, combining measurement results associated with the measured optical properties with the correction data record associated with the mask in a data processing device to produce a corrected measurement result ("comparing the first image and the second image" at column 3, lines 4-6); For clarity, the Examiner is showing by way of example that Crell teaches comparing multiple measurement results associated with the correction data record. This example is further shown at Figure 2 and 3.

and storing a measurement data record with the corrected measurement result in a database system ("...step (g) is carried out while using the first defect inspection system to record another portion of the sub-area of the first mask and using the first control computer to construct a first image from the other portion, and while using the second defect inspection system to record another portion of the sub-area of the reference mask and using the second control computer to construct a second image from the other portion of the reference mask." at column 3, line 14).

Laidig teaches wherein the correction data record includes information for the correction of inhomogeneities of an illumination system ("The present invention generally relates to photolithography, and in particular to a method of generating a known set of functions (i.e., calibrated model) defining the performance of an imaging system which are subsequently utilized to correct for optical proximity effects and to improve the printing of mask patterns on substrates." at column 1, line 16).

Kenan, Lehman, Laidig and Crell are combinable because they are in the same field of mask inspection where the inspection scans for defects, holes, etc. (See title and abstract of each invention).

All the claimed elements were known in the prior art at the time of the invention. The skilled artisan could have combined all these claimed elements by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

These claim elements would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Specifically, Lehman teaches detecting at least one parameter for the characterization of the mask and Laidig teaches mask inspection of not only the mask (photolithography for optical transfer) but also inspection of the system onto which the pattern is formed onto a substrate. (At abstract). Therefore, at the time of the invention it would have been obvious to the skilled artisan to combine the claimed elements as rejected about to obtain the specified claimed elements of Claim 12.

Specifically, Crell teaches combining measurement results associated with the measured optical properties with the correction data record associated with the mask in a data processing device to produce a corrected measurement result.

Although, Kenan, Lehman and Laidig does not specifically teach combining measurement results to produce a corrected measurement result, Crell teaches by way of example, the

implementation of this combination of these measurement results. The simple substitution would have been obvious because the substitution of one known element for another would have again yielded predictable results to one of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to combine Kenan, Lehman, Laidig and Crell to obtain the invention as specified in Claim 12.

Regarding Claim 13: (Currently Amended) Kenan discloses a device for determining imaging errors of an optical system in the production of a mask for semiconductor component fabrication ("A reticle inspection system for inspecting reticles can be used as an incoming inspection tool, and as a periodic and pre-exposure inspection tool. The detection is performed by acquiring the image of the reticle under the same optical conditions as the exposure conditions, (i.e. wavelength, numerical aperture, sigma, and illumination aperture type) and by comparing multiple dies to find errors in the line width." at abstract), the device comprising:

Lehman teaches means for detecting at least one parameter that characterizes the mask ("Indeed, the inventive method and apparatus are equally applicable to inspection of masks, photo masks, reticles, or any other such product used in similar fashion in the manufacture of semiconductor devices, as for example by a photolithographic process." at paragraph [0076]. "In such an inspection, interferometers could be used, especially where resolution on a wavelength scale is needed." at paragraph [0068]).

Crell teaches a correction database with at least one stored correction data record ("As a result of the considerable increases in the speed of computing systems in recent years, changes have increasingly been made from the conventional die-to-die inspection in which identical structures present many times on the mask are compared with one another to die-to-database inspection in which a structure on the mask is compared with a data image stored in the database.' at column 1, line 44),

data processing means for automatically selecting a correction data record from the correction database in a manner dependent on at least one parameter that characterizes the mask (Refer to Figure 3, numeral 102);
a measuring system for determining optically measurable properties of the mask (Refer to Figure 3, numeral 103; ("The inventive system detects two kinds of defects…(2) surface defects. The detection of surface defects is performed by acquiring transmission and dark-field reflection images of the reticle and using the combined information to detect particles, and other surface defects." at abstract);

Crell teaches by way of example, means for combining measurement results of the optically measurable properties of the mask with the correction data record associated with the mask to produce a corrected measurement result ("comparing the first image and the second image" at column 3, lines 4-6); For clarity, the Examiner is showing by way of example that Crell teaches comparing multiple measurement results associated with the correction data record. This example is further shown at Figure 2 and 3.

and means for generating a measurement data record with the corrected measurement result in a database system ("...step (g) is carried out while using the first defect inspection system to record another portion of the sub-area of the first mask and using the first control computer to construct a first image from the other portion, and while using the second defect inspection system to record another portion of the sub-area of the reference mask and using the second control computer to construct a second image from the other portion of the reference mask." at column 3, line 14).

Laidig teaches wherein the correction data record includes information for the correction of inhomogeneities of an illumination system ("The present invention generally relates to photolithography, and in particular to a method of generating a known set of functions (i.e., calibrated model) defining the performance of an imaging system which are subsequently utilized to correct for optical proximity effects and to improve the printing of mask patterns on substrates." at column 1, line 16).

Kenan, Lehman, Laidig and Crell are combinable because they are in the same field of mask inspection where the inspection scans for defects, holes, etc. (See title and abstract of each invention).

All the claimed elements were known in the prior art at the time of the invention. The skilled artisan could have combined all these claimed elements by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

These claim elements would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Specifically, Lehman teaches means for detecting at least one parameter for the characterization of the mask and Laidig teaches mask inspection of not only the mask (photolithography for optical transfer) but also inspection of the system onto which the pattern is formed onto a substrate. (At abstract). Therefore, at the time of the invention it would have been obvious to the skilled artisan to combine the claimed elements as rejected about to obtain the specified claimed elements of Claim 13.

Specifically, Crell teaches combining measurement results associated with the measured optical properties with the correction data record associated with the mask in a data processing device to produce a corrected measurement result.

Although, Kenan, Lehman and Laidig does not specifically teach combining measurement results to produce a corrected measurement result, Crell teaches by way of example, the implementation of this combination of these measurement results. The simple substitution would have been obvious because the substitution of one known element for another would have again yielded predictable results to one of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to combine Kenan, Lehman, Laidig and Crell to obtain the invention as specified in Claim 13.

Regarding Claim 14: (New) By way of example, Lehman teaches wherein the correction data record includes information for the correction of inhomogeneities of at least one of an associated CCD chip and an optical element ("Transmission detector 370 and reflection detector 340 may be CCD devices...Light source 310 may be a pulsating laser, as part of the interferometry system, to facilitate inspection of phase shift masks, particularly in conjunction with area CCDs in detectors 370 and 340).

Regarding Claim 15: (New) Lehman teaches detecting the at least one parameter that characterizes the mask ("Referring to Figure 1, the inventive method is implemented as follows. First, a reticle which is know to be good (i.e. is believed to be substantially free of defects. or as free of defects as is reasonably possible) is identified (step 1)." at paragraph [0030]).

Regarding Claim 16: (New) Crell teaches by way of example, wherein the measurement results associated with the measured optical properties and the correction data record are combined in a data processing device ("comparing the first image and the second image" at column 3, lines 4-6 via Figure 3, numeral 5, 5' and 5"); For clarity, the Examiner is showing by way of example that Crell teaches comparing multiple measurement results associated with the correction data record. This example is further shown at Figure 2 and 3.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kenan et al. (US 7,133, 548 B2) in combination with Crell (US 6,970,589 B2) and further in view of Lehman (US 2003/0048939 A1).

Regarding Claim 10: (Currently Amended)

Kenan and Crell teach all the claimed elements as rejected above.
Kenan and Crell does not specifically teach said measuring system includes means for measuring CD dimensions and/or positional errors of one of a CoG mask and a phase shift mask.

Lehman teaches wherein said measuring system includes means for measuring CD dimensions and/or positional errors of one of a CoG mask and a phase shift mask ("The invention is not limited by the particular type of inspection apparatus being used. For example, it is within the contemplation of the invention to use the inventive MRI (Master Reticle Inspection) technique in connection with inspection of phase shift masks." at paragraph [0068]).

Kenan, Crell and Lehman are combinable because they are in the same field of mask inspection where the inspection scans for defects, holes, etc. (See title and abstract of each invention).

All the claimed elements were known in the prior art at the time of the invention. The skilled artisan could have combined all these claimed elements by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to combine the teachings of Kenan and Crell further in view of a "measuring system includes means for measuring CD dimensions and/or positional errors of one of a CoG mask and a phase shift mask" as taught by Lehman to obtain the invention as specified in Claim 10 to make the overall reticle inspection process more efficient and cost effective.

10. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenan et al. (US 7,133, 548 B2) in combination with Laidig et al. (US 7,175,940 B2) and Crell (US 6,970,589 B2) and further in view of Udagawa et al. (US 2004/0126673 A1).

Regarding Claim 6: (Currently Amended)

The combination of Kenan, Laidig and Crell teaches all the claimed elements as rejected above. The combination of Kenan, Laidig and Crell does not specifically teach the parameter that characterizes the mask comprises is identified by an identification mechanism, however,

Udagawa teaches wherein the parameter that characterizes the mask comprises is identified by an identification mechanism ("The reticle 10 also includes a band-shaped identification code 14 as in Figure 6(a). The identification code 14 serves to uniquely identify the reticle..." at paragraph [0025])

Kenan, Laidig, Crell and Udagawa are combinable because they are in the same field of mask inspection of reticles, specifically, reticle identification. (See title and abstract, Udagawa)

It would have been obvious, at the time that the invention was made, to one of ordinary skill in the art to add the identification mechanism, specifically a barcode, as taught by Udagawa to the combination of claimed elements as taught by Kenan, Laidig and Crell.

The suggestion/motivation to combine these claimed elements would have been that "The identification code serves to uniquely identify the reticle, thereby facilitating control of the

automated traffic of multiple reticles 10 into and out of the microlithography system." at paragraph [0025, Udagawa].

Therefore, at the time of the invention, it would have been obvious to the skilled artisan to combine the claimed elements as rejected by Kenan, Laidig and Crell with the identification code as taught by Udagawa to obtain the specified claimed elements of claim 6.

Regarding Claim 7: (Currently Amended) Udagawa teaches wherein the identification mechanism comprises a bar code"(Typically the identification code 14 is in the form of a bar code, which is the name used generally herein." at paragraph [0025]).

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kenan et al. (US 7,133, 548 B2) in combination with Crell (US 6,970,589 B2) and further in view of Inoue (US 6,656,648 B2).

Regarding Claim 11: (Original)
Kenan and Crell teach all the claimed elements as rejected above.
Kenan and Crell does not specifically teach the mask is designed for wavelengths of 365nm, 193nm or 157nm.

However, Inoue teaches wherein the mask is designed for wavelengths of 365nm, 193nm or 157nm ("In the experiment, the imaging is performed by using, for example, a mercury lamp

whose wavelength is 365 nm as the light source and using a CCD line sensor imaged by the objective lens of NA 0.75." at column 5, line 29).

Kenan, Crell and Inoue are combinable because they are in the same field of mask inspection where the inspection scans for defects, holes, etc. (See title and abstract of each invention).

All the claimed elements were known in the prior art at the time of the invention. The skilled artisan could have combined all these claimed elements by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Therefore, it would have been obvious to combine the teachings of Kenan and Crell further in view of a "mask designed for wavelengths of 365nm, 193nm or 157nm as taught by Inoue to obtain the invention as specified in Claim 11 to make the overall reticle inspection process more efficient and cost effective.

Combining the mercury lamp whose wavelength is 365 nm, as taught by Inoue would provide an analysis that may further prevent the errors of the optical correction device. The optical system with improved microscopic details will correspondingly yield improved results in semiconductor manufacturing system and mask inspection operation.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US (2004/0157134)	US 6,709,589	US 5,563,702	US 7,084,952
US 6,883,158	US 6,788,383	US 6,721,033	

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mia M. Thomas whose telephone number is (571)270-1583. The examiner can normally be reached on Monday-Thursday 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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